

REMARKS

A total of 15 claims remain in the present application. The foregoing amendments are presented in response to the Office Action mailed April 4, 2007, wherefore reconsideration of this application is requested.

By way of the above-noted amendments, original claims 1, 4, 9-12, and 17 have been amended to more clearly define features of the present invention. More specifically, independent claims 1, 4, and 17 have been amended to define the feature "wherein the first areas are defined by $(I_2 \oplus I_3) \cdot (Q_2 \oplus Q_3)$ and the second areas are defined by either one of $\overline{Q_1 \oplus Q_2} \cdot (\overline{I_1 I_2 I_3} + \overline{I_1 I_2 I_3}) + (\overline{I_1 \oplus I_2}) \cdot (\overline{Q_1 Q_2 Q_3} + \overline{Q_1 Q_2 Q_3})$ and $(\overline{I_1 \oplus I_2} \cdot \overline{Q_2 \oplus Q_3}) + (\overline{Q_1 \oplus Q_2} \cdot \overline{I_2 \oplus I_3})$." Claims 2-3, 7-8 and 18-19 have been cancelled to avoid redundancy in view of amended claims 1, 4 and 17. In addition, claims 9-12 have been amended to depend from claim 5, and claims 13-16 cancelled to avoid redundancy in view of amended claims 9-12. Claim 20 has been amended in response to the Examiner's objections to the drawings under 37 C.F.R. § 1.83(a). Finally, new claims 21-26 have been introduced to define further features of the present invention which are believed to be patentable.

In preparing the above noted amendments, careful attention was paid to ensure that no new subject matter has been introduced. In particular, support for the subject matter of new claims 21-26 may be found at paragraphs 48-52 of the originally filed specification.

Referring now to the text of the Office Action,

- the drawings are objected to under 37 C.F.R. § 1.83(a), on the basis that the claimed local oscillator, coupler, detector, and filter elements defined in claims 5 and 10-16, and the look-up table of claim 20, are not shown in the drawings;

- claims 1, 4 and 17 stand rejected under 35 U.S.C. § 102(b) as unpatentable over the teaching of United States Patent No. 4,987,375 (Wu et al.);
- claims 5, 6 and 20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the teaching of Wu et al, in view of United States Patent No. 5,363,408 (Piak et al.); and
- claims 2, 3, 7-16, 18 and 19 stand objected to as being dependent on a rejected base, claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As an initial matter, Applicant appreciates the Examiner's indication of allowable subject matter in claims 2, 3, 7-16, 18 and 19. It is believed that the above-noted issues are fully addressed by way of the above-noted amendments in the claims, and further in view of the following comments.

Objections to the drawings.

As noted above, the Examiner has objected to the drawings on the basis that the claimed local oscillator, coupler, detector, and filter elements defined in claims 5 and 10-16, and the look-up table of claim 20.

With specific reference to the look-up table defined in claim 20, the Examiner's objection is addressed by the above-noted cancellation of claim 20.

With specific reference to the elements of claims 5 and 10-16, Applicant believes that all of the claimed elements are illustrated in the originally filed drawings. In particular, the Examiner's attention is directed to FIG. 14, and the accompanying description at paragraphs 70-74 of the original specification, which clearly shows the claimed local oscillator (204), coupler (210), detector (230), and filter (250) defined in claims 5 and 10-16.

The person of ordinary skill in the art will recognise that FIG. 14 shows an arrangement in which QPSK demodulation into I and Q components is performed in the digital domain. Thus, FIG. 14 shows A/D converters 260 located upstream of demodulator 270. A substantially equivalent operation, but with analog QPSK demodulation into I and Q components is shown in FIG. 9, wherein an analog QPSK demodulator 110 is located upstream of first and second A/D converters 112 and 114.

In light of the foregoing, it is believed that every element defined in the claims is, in fact illustrated in the drawings, as required by 37 C.F.R. § 1.83(a). Accordingly, favourable reconsideration and withdrawal of the Objections to the drawings is believed to be in order, and such action is courteously requested.

Rejections under 35 U.S.C. § 102(b) and 103(a)

As noted above, independent claims 1, 4, and 17 have been amended to define the feature “wherein the first areas are defined by $(I_2 \oplus I_3) \cdot (Q_2 \oplus Q_3)$ and the second areas are defined by either one of $\overline{Q_1 \oplus Q_2} \cdot (\overline{I_1 I_2 I_3} + \overline{I_1 I_2 I_3}) + (\overline{I_1 \oplus I_2}) \cdot (\overline{Q_1 Q_2 Q_3} + \overline{Q_1 Q_2 Q_3})$ and $(\overline{I_1 \oplus I_2} \cdot \overline{Q_2 \oplus Q_3}) + (\overline{Q_1 \oplus Q_2} \cdot \overline{I_2 \oplus I_3})$.” As such, amended claims 1, 4, and 17 incorporate the subject matter of original claims 2-3, 7-8 and 18-19 which were previously indicated as being allowable. For at least this reason, independent claims 1, 4 and 17 are now believed to define allowable subject matter.

In view of the foregoing, it is believed that the present application is in condition for allowance and early action in that respect is courteously requested.

If any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 19-5113.

Respectfully submitted,

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